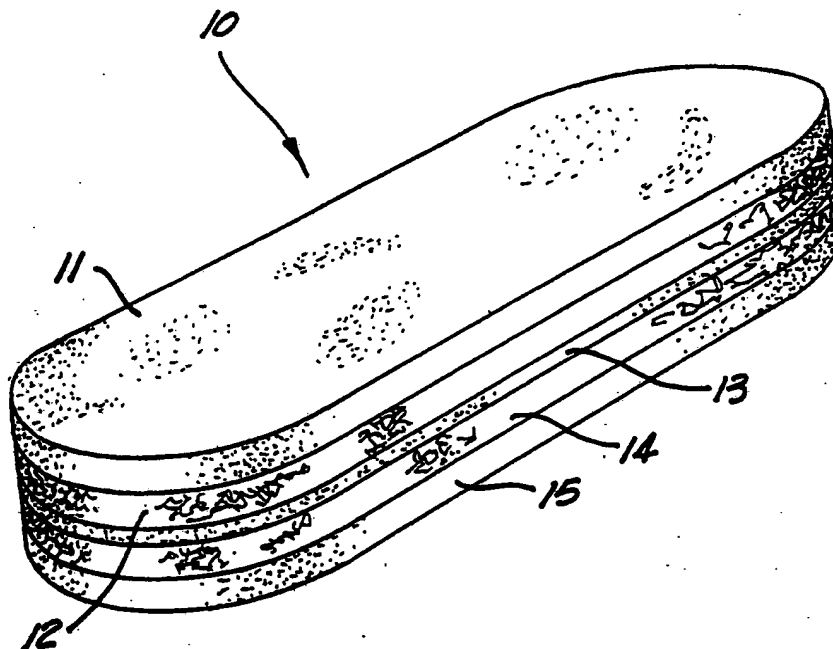




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(54) Title: **ABSORBANT ARTICLES**

(57) Abstract

An incontinence article (10) including a body side layer (11) of brushed cotton or flannelette. Coterminus with the body side liner is a layer of polyester knit (12) which again is overlaid with a viscose layer (13). The viscose layer (13) would consist of 70 % viscose rayon (regenerated cellulose fibre - wood pulp), 20 % polyethylene, and 10 % polyester. The article (10) is adapted to be inserted in a fitting garment or alternatively the general structure thereof may be incorporated in a nappy or other incontinence garment.

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ABSORBANT ARTICLES
TECHNICAL FIELD

The present invention relates to re-usable cloth absorbent articles and more particularly to washable articles such as nappies (diapers), feminine care aids (panty liners and panty protectors), incontinent pads, and fitted undergarments.

BACKGROUND ART

Incontinent garments and pads, and feminine care products have developed more recently into one use disposable products. Earlier re-usable (washable) items tended to be manufactured from a single cloth sheet.

A washable nappy is described in British Patent 2,194,878, which nappy is of a particular configuration. However there is no analysis of the problems in respect of the materials to be employed.

Similarly British Patent 2,164,542 discusses the particular configuration of the nappy but merely states that it is to consist of absorbent material such as cotton. US Patent 4,516,975 also describes a washable nappy. However in this particular instance attention is paid to the material from which the nappy is formed. More particularly, the nappy has an outer layer forming a moisture barrier, a moisture absorbent felt layer, a middle layer of batting forming the frame of the diaper, and a soft inner facing layer made of a non-irritating absorbent washable fabric.

European Patent Publication 0 122 803 describes an incontinence article. The article consists of an elongated pad containing absorbent material retained within a water-pervious cover. The pad has at least one strip of transmitting material having substantially no resistance to liquid flow. The absorbent layer would consist of wood flock and the strip or strips would be formed of skeleton polyester foam. A cotton wool layer extends over the entire upper surface of the wood flock and foam.

US Patent 4,402,690 also describes a nappy which may be laundered. The nappy has a central absorbent layer preferably comprising two layers of cotton material or cotton gauze. Immediately adjacent the inner layer is a quantity of padding which can be made from polyester blended batting or any other suitable non-absorbent padding.

Australian Patent 125203 also describes a cloth nappy. The nappy has a cotton outer sheeting which encompasses cotton wool.

International Patent Publication No WO 91/14812 describes a washable nappy. The nappy is of a laminated structure having an inner layer and outer layer both formed of absorbent fabric material,

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encompassing an intermediate layer of synthetic material which aids in transferring moisture from the inner layer to the outer layer. The outer layer may be formed of plush cotton towelling, while the inner layer is formed of brushed cotton or flannelette. The intermediate layer is bonded polyester.

The above discussed articles do not provide an efficient incontinence garment which will generally withstand repeated laundering.

OBJECT OF THE INVENTION

It is the object of the present invention to overcome or substantially ameliorate the above disadvantage.

DISCLOSURE OF THE INVENTION

There is disclosed herein a washable incontinence article comprising a laminated structure including:

- a body side layer of absorbent fabric consisting of cotton or flannelette;

- a layer of polyester knit overlaying said body side layer; and

- a layer of viscose overlaying said polyester knit layer.

Preferably the article would have a water impervious outer layer which may consist of a urethane coated polyester.

In a further preferred form, a polyester wadding would be provided with the polyester knit.

In a still further preferred form the viscose layer would be overlaid with a further polyester knit layer which in turn would be overlaid with a cotton or flannelette layer.

Preferably the viscose layer consists of 70% viscose rayon (regenerated cellulose fibre - wood pulp), 20% polyethylene, and 10% polyester.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred forms of the present invention will now be described by way of example with reference to the accompanying drawings wherein

Figure 1 is a schematic perspective view of an incontinence pad;

Figure 2 is a schematic plan view of a garment to receive the pad of Figure 1;

Figure 3 is a schematic front elevation of a nappy; and

Figure 4 is a schematic rear elevation of the nappy of Figure 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In Figure 1 there is schematically depicted an incontinence pad 10. The pad 10 may be of an oval configuration as generally depicted, or an "hour-glass" configuration if so required.

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The pad 10 comprises an outer layer 11 of cotton or flannelette. The layer 10 would weigh approximately 240 grams per square metre. Preferably the cotton, if employed, would be 100% brushed cotton.

The next layer 12 is 100% polyester, lock knit netting fabric, approximately 80 grams per square metre. The middle layer 13 is a viscose rayon regenerated cellulose fibre material. The next layer 14 is the same as layer 12, while the layer 15 is the same as layer 11.

The various layers 11 to 15 are held together by the layers 11 and 15 forming an envelope sewn along the edges.

The garment 20 of Figure 2 is a nappy having a rear portion 21 tapering to a crutch portion 22. Extending from the crutch portion 22 is a front portion 23. The garment 10 would have an outer layer consisting of a water impervious sheet such as urethane coated polyester or vinyl. Sewn to that would be an inner layer of cotton. The upper and lower edges 24 and 25 may be provided with elastic if needed together with the sides 26 which form the leg openings. Fasteners such as Velcro® strips 27 may be provided. Alternatively press tabs or other fasteners are also envisaged.

In Figures 3 and 4 a nappy of a unitary construction is provided, not requiring an insert pad such as discussed with reference to Figures 1 and 2. In this embodiment the nappy 30 would have an outer layer comprising a sheet of water impervious material such as urethane coated polyester or vinyl. The outer layer 31 would be sewn to an inner layer of cotton 32. As an alternative, the inner layer 32 may be flannelette. Abutting the inner layer 32 would be a layer of 100% polyester, lock knitted netting fabric. The next layer would consist of viscose rayon regenerated cellulose fibre. More preferably this layer would be 70% viscose rayon, 20% polyethylene and 10% polyester. If so required viscose padding could also be added. This viscose layer would then abut the outer layer 31.

The outer layer 31 would be preferably 70 denier knit polyester coated with urethane.

As a still further alternative, the nappy of Figures 3 and 4 could be provided with an elasticised top and/or sides so as to constitute a "pull-on" garment.

The above described preferred embodiment by providing a 100% brushed cotton or flannelette inner lining, present to the skin of the user a soft pliable layer that will not irritate. Still further the garment would not be hot to wear. The polyester netting creates a

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separate air pocket between the two adjacent layers and will stick to the centre padding when wet. The presence of this polyester netting helps to provide air circulation for quicker drying after laundering. The additional wadding which may be added provides a cushion for the wearer and absorbs excess moisture.

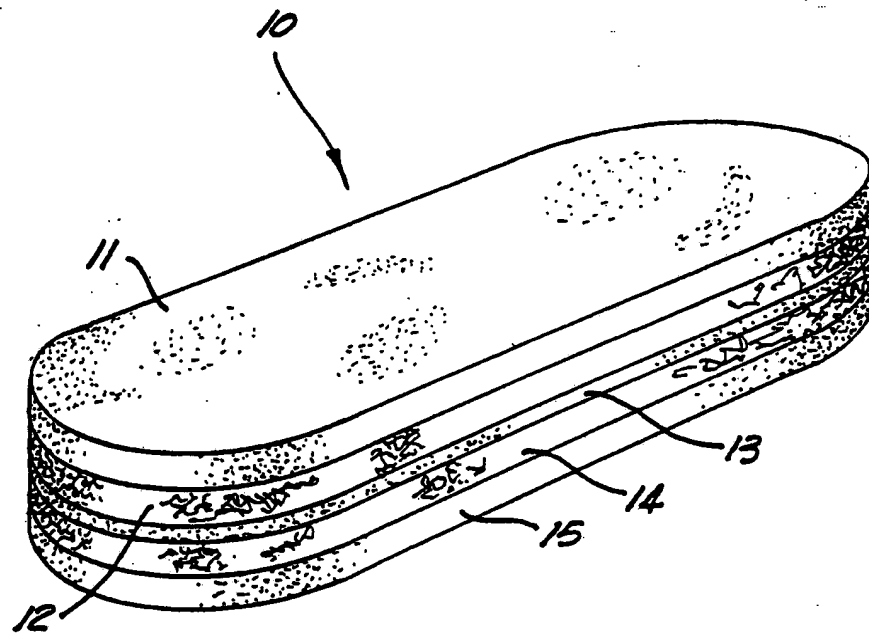
The centre layer, that is the layer of viscose regenerated cellulose fibre is provided to absorb moisture. The outer plastics layer (polyurethane/vinyl) provides an outer moisture shield to protect outer garments.

The present invention in its preferred embodiments provides a garment which is comfortable and easy to wear. Still further the article is re-usable and therefore is more environmentally sensitive. That is, by being washable the garment may be re-used.

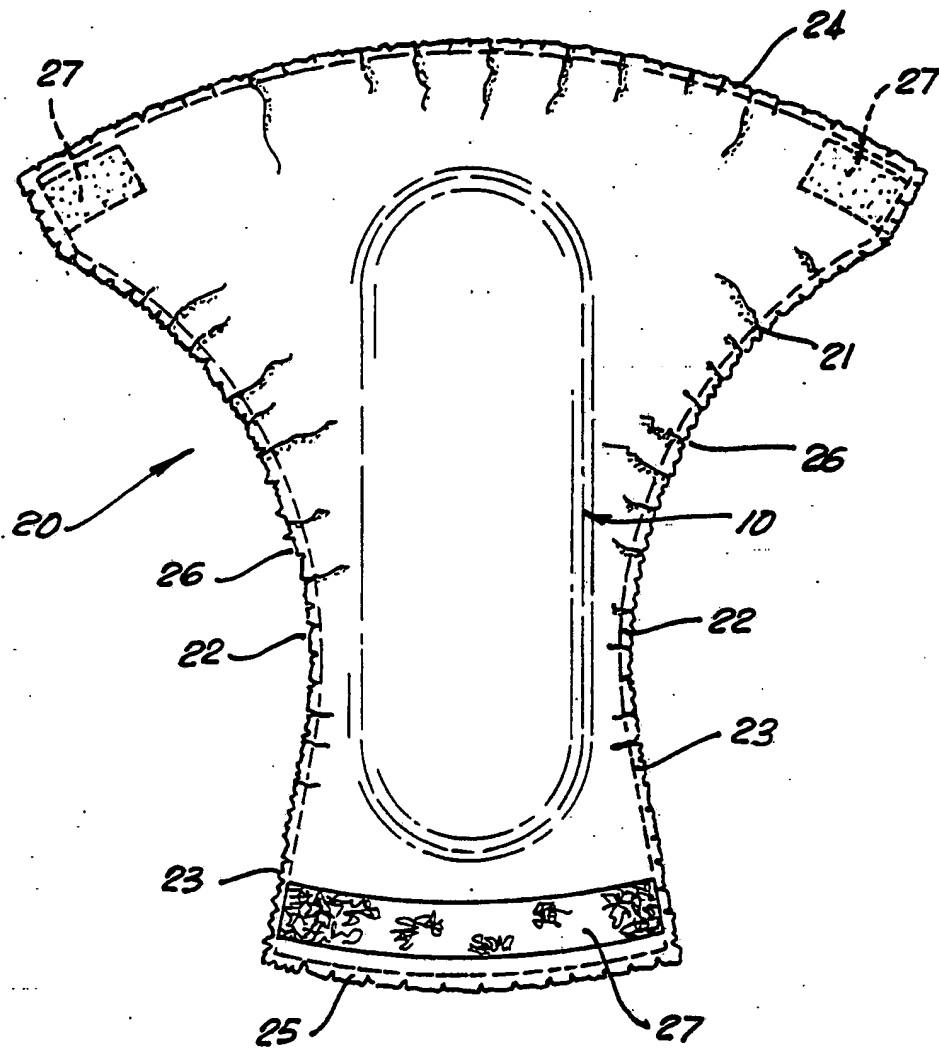
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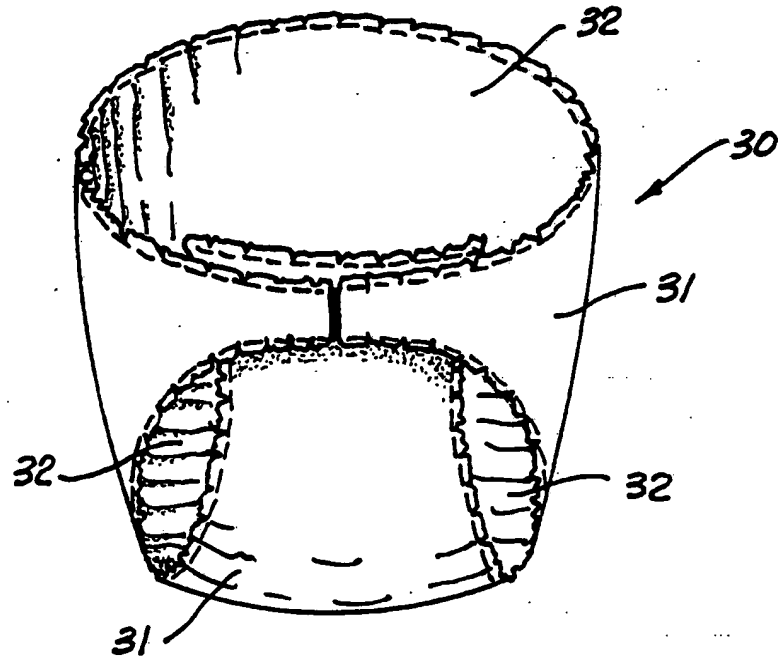
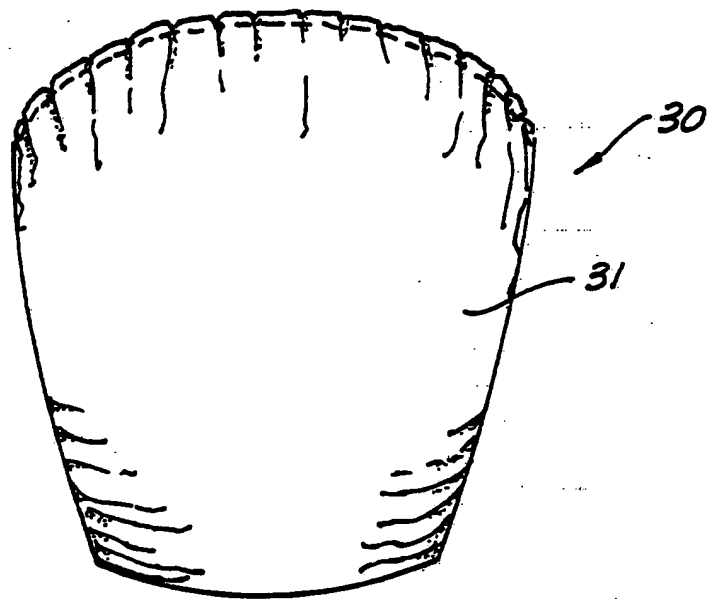
CLAIMS

1. A washable incontinence article comprising a laminated structure including:
 - a body side layer of absorbent fabric consisting of cotton or flannelette;
 - a layer of polyester knit overlaying said body side layer; and
 - a layer of viscose overlaying said polyester knit layer.
2. The article of claim 1, wherein said polyester knit is provided with polyester wadding.
3. The article of claim 1 or 2, wherein said viscose layer consists of 70% viscose rayon, 20% polyethylene and 10% polyester.
4. The article of any one of claims 1 to 3, further including an outer layer remote from said body side liner, which outer layer is a water impervious sheet.
5. The article of claim 3 or 4, wherein said layer of polyester knit is 100% polyester, lock knit netting fabric of approximately 80 grams per square metre.
6. The article of claim 4, or claim 5 when appended to claim 4, wherein said outer layer is a polyester urethane coated sheet.
7. An incontinence article substantially as hereinbefore described with reference to the accompanying drawings.



SUBSTITUTE SHEET

FIG. 2

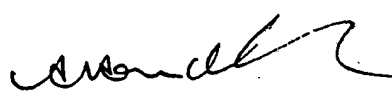
FIG. 3FIG. 4

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU92/00531

A. CLASSIFICATION OF SUBJECT MATTER Int. Cl. ⁵ A61F 13/46 According to International Patent Classification (IPC) or to both national classification and IPC					
B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) IPC A61F 13/18, 13/46; A41B 13/02 Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC as above Electronic data base consulted during the international search (name of data base, and where practicable, search terms used)					
C. DOCUMENTS CONSIDERED TO BE RELEVANT					
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to Claim No.			
Y	US,A,4516975 (MITCHELL) 14 May 1985 (14.05.85) column 3 lines 7-34	1-6			
Y	AU,A,57476/90 (LAKISS-SMITH) 13 December 1990 (13.12.90) page 2 lines 7-19	1, 2, 5			
Y	US,A,4402690 (REDFERN) 6 September 1983 (06.09.83) column 4 lines 26-62	1, 2, 4, 5			
Y	AU,A,71181/74 (NICHOLAS PROPRIETARY LIMITED) 15 January 1976 (15.01.76) page 3 lines 8-22	1, 2, 4, 5			
<div style="display: flex; justify-content: space-between;"> <div> <input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C. </div> <div> <input checked="" type="checkbox"/> See patent family annex. </div> </div>					
<table style="width: 100%; border: none;"> <tr> <td style="width: 33%; vertical-align: top;"> * Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 33%; vertical-align: top;"> "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family </td> <td style="width: 33%;"></td> </tr> </table>			* Special categories of cited documents : "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
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Date of the actual completion of the international search 27 November 1992 (27.11.92)		Date of mailing of the international search report 1 Dec 1992 (01.12.92)			
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No. 06 2811841		Authorized officer  A.R. HENDRICKSON Telephone No. (06) 2832415			

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate of the relevant passages	Relevant to Claim No.
Y	AU,A,46473/89 (BABYROOS PTY. LTD.) 14 June 1990 (14.06.90) page 5 line 19 - page 6 line 10	1-6
Y	US,A,3459186 (SCHWARTZ) 5 August 1969 (05.08.69) column 2 lines 27-51	1-6
Y,E	US,A,5085653 (LEVY) 4 February 1992 (04.02.92) column 2 line 49 - column 3 line 39	1-6

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member
US,A, 4516975	US,A, 4704117	
AU,A, 57476/90	GB,A, 2249469	WO,A,9014812
AU,A, 46473/89	WO,A, 9006066	
US,A, 3459186	DE,A, 1610523	NL,A, 6705329
US,A, 5085653	CA,A, 2048215	EP,A, 490630
<p>END OF ANNEX</p>		